

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q80489

Yoshinori YOSHIDA, et al.

Appln. No.: 10/802,883

Group Art Unit: 1794

Confirmation No.: 5194

Examiner: Thao T. TRAN

Filed: March 18, 2004

For: CLEANING SHEET AND ITS PRODUCTION METHOD AS WELL AS
TRANSPORTING MEMBER HAVING SUCH CLEANING SHEET

RESPONSE UNDER 37 C.F.R. § 1.111

MAIL STOP AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

In response to the Office Action dated January 14, 2008, please consider the remarks as submitted herewith on the accompanying pages.

REMARKS

Claims 1-6, 13-15 and 19-28 are all the claims pending in the application. No claims are amended.

Interview

As a preliminary matter, Applicants wish to thank the Examiner for the courtesy extended to the Applicants' representative in a telephone interview conducted on May 6, 2008, during which the following arguments were presented, the deficiencies of the prior art, alone or in combination, were identified, and the incompatibility and opposed teachings of the prior art described.

The accompanying Summary of the Interview captures the subjects discussed and the positions taken. While the Examiner continues to believe that structural and/or chemical elements should be added to the claims in order to distinguish over the prior art, as noted in the

Interview Summary dated May 13, 2008, Applicants respectfully submit that the claims would overcome the present rejections on the basis of the following arguments.

Claim Rejections - 35 U.S.C. § 103

Claims 1-5, 13 and 19-28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Skinner et al (4,342,793). This rejection is traversed for at least the following reasons.

The Examiner substantially repeats the text of the rejection at pages 3-5 of the Office Action dated December 27, 2006 and at pages 4 and 5 of the Office Action dated August 23, 2007. Thus, Applicants' previous arguments continue to be valid and are reemphasized in light of the additional remarks subsequently presented.

Claims 1-5, 13 and 19-28 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Grube (6,817,052). This rejection is traversed for at least the following reasons.

Again, the Examiner substantially repeats the text of the rejection from the previous Office Action dated December 27, 2006 and at pages 4 and 5 of the Office Action dated August 23, 2007. This rejection is traversed for at least the reasons given in the prior Amendment and the additional remarks presented below.

Claims 3, 4 and 6 are rejected under 35 U.S.C. §103(a) as being unpatentable over Grube (6,817,052) in view of Skinner et al. Again, the Examiner substantially repeats the text of the rejection from the previous Office Action dated December 27, 2006 and at pages 4 and 5 of the Office Action dated August 23, 2007. This rejection is traversed for at least the reasons given in the prior Amendment and the additional remarks presented below.

Response to Arguments

In the Examiner's Response to Arguments at page 6, the Examiner notes that the claims are now rejected under § 103 but that the same art is applied and that the same arguments are maintained. The Examiner repeats her comments with respect to (1) the absence of abrasives, (2) the penetration of a probe into a pad and (3) the presence of a tough cured outer layer, as argued by the Applicants.

However, the rejection should be overcome because (1) the functional limitations in the claims are effective to define the metes and bounds of the recited materials in the cleaning layer and (2) the cited prior art has clear and express teachings of materials and cleaning steps that function in a direction opposite to that of the present invention, as specifically described below.

The structure of the invention is defined by the function of its materials, just as structures may be defined by the function recited in “means plus function” limitations under 35 U.S.C. § 112, paragraph 6. The functions define and limit the invention, and distinguish the invention over the prior art materials, which may have similar chemical compositions but function totally differently. Applicants respectfully submit that, because of the several expressly recited functions, additional materials or chemical limitations are not required.

Function 1: Adapted to Receive Penetrating Needles

Skinner

Skinner does not teach the function of penetrating into a pad. Indeed, Skinner et al has no relationship whatsoever to a probe cleaning pad. Indeed, Skinner does not even contemplate that anything can penetrate its coating, as it is “protective” and has the characteristics of being “hard and tough.”

More specifically, Skinner does not teach or suggest that a function of its curable coatings may be in a cleaning pad application. In fact, the exclusive environment for Skinner is the formulation of “interpenetrated resin compositions [that] form **tough and hard coatings** on various substrates” (see Abstract), in particular, “protective, transparent or translucent coatings for various substrate materials such as wood, paper, metal and plastics.”(col. 1, lines 12-15) The focus is on the material and the function of that material is the provision of a tough, hard and protective coating, not one that is to be penetrated.

Finally, such coating would surely result in abrasion and wear of a probe as such tough, hard and protective coating would not function to receive probes in a repetitive cleaning process.

Grube

With respect to Grube, the reference teaches a sticky surface roller 204 in combination with an “abrading pad,” an “abrading block” or an “abrading roller” that is not illustrated or

numbered (see col. 3, lines 49-67). The **abrading pad**, for example, is discussed at col. 9, lines 1-20 as possibly receiving a probe. However, there is no teaching that the roller is penetrated. The abrading pad is penetrated to loosen contaminants in a first step, and the roller is required to remove the resulting debris after loosening.

Specifically, the text requires first pressing and extracting the tips of probes 104 against an abrading pad (not the roller). Thus, debris on the tips are scrapped off or loosened by repeating a cleaning cycle of pressing and extracting the tips of the probe against (and possibly into) the abrading pad. There is no suggestion that the tips go into the roller 204 or teaching with respect to the material of the roller. Pressing the probe tips into the abrasive pad will clearly abrade the tips, as the pad is made of abrasive material such as tungsten carbide.

The structure and steps of Grube are totally contrary to the present invention, as the goal in Grube is simply “limiting any damage” (which admits that damage occurs) while the present invention avoids damage.

Two Structures vs One Structure

Based upon the foregoing, it is clear that Grube requires **two** structures for use in separate steps, namely, an abrading pad and a roller.

By contrast, the present invention has a **single structure** that both (1) loosens contaminants when a probe penetrates into the material, and (2) retains the debris, thereby providing an efficient and effective product and procedure that is highly cost effective.

Cleaning by Abrasion vs No Abrasion Material

In Grube, the abrading pad is made from tungsten carbide or any other appropriate material whose hardness is substantially similar to the hardness of the probe tips (col. 9, lines 6-9 in US 6,817,052). Such "abrading pad," as taught in Grube, will abrade the tips of probes to thereby expose the clean surfaces of the probe tips. For effective operation, both tungsten carbide and the material constituting the probe tips are metals.

By contrast, the "cleaning sheet" of the present invention is made of polymer that is soft and receptive to probe insertion without abrasion.

Function 2: Adapted to Remove and Retain Impurities

The claim states that the single cleaning sheet is operative to both remove and retain impurities. Presumably, this is substantially all impurities.

Grube clearly relies on an abrasion function of an abrasive structure to remove foreign material. However, the foreign material is left on the surface of the abrasive structure, the probe or the surroundings, thereby causing a contamination problem. Indeed, this is the source of the problem that Grube solves by using a separate sticky roller to remove the residual contaminants, as explained at col. 4, lines 25-33.

By contrast, the "cleaning sheet" of the present invention has the function of (1) removing foreign matter adhered to the probe needle by wiping and pulling on the foreign matter (2) without abrading the tips of probes and (3) without contaminating the environment and probes.

For all the foregoing reasons, the "cleaning sheet" in the present invention has completely different function from that of Grube's "abrading pad" alone or in combination with a roller.

Function 3: No Re-adhering of the Foreign Matter

Applicants again respectfully submit that the claims expressly recite that (1) the layer is "adapted to receive penetrating probe needles and remove and retain impurities on a tip of said probe needle" and (2) there will be no re-adhering of the foreign matter or the cleaning layer material on the probe needle after the cleaning operation.

Applicants again submit that these are structural and not use limitations. Further, Applicants respectfully submit that the Examiner has no basis for asserting that Skinner has such properties, as none are taught, and the disclosed features of the prior art structure are contrary to the invention.

Cured Tough Outer Layer

The Examiner dismisses the Applicant's argument that the Grube and Skinner references have a cured outer layer that results in a tough surface that prevents (1) penetration by a probe, (2) removal and retention of contaminants, and (3) without leaving cleaning material on the

probe. However, the disclosure in Skinner is that the material is “hard and tough” and serves as a protective layer for wood, plastics, and the like. One skilled in the art would understand that this litany of characteristics of the Skinner coating is opposite to those required by the invention.

Even though the disclosed and claimed invention is also directed to a radiation cured layer, which the Examiner asserts may be crosslinked to some limited extent, the distinguishing feature is the existence of several functions not found in the prior art..

Applicants again submit that the coatings in the prior art are fully crosslinked and, as such, would be too hard for use as a medium for penetration. As already noted, Skinner expressly states that the coatings are to be “tough, hard and protective.” Nothing in Skinner teaches or suggests the opposite, that is, a soft layer that is penetrable numerous times and removes and retains contaminants without placing such contaminants or the layer material onto the probe.

Further, when applied to the structure of Grube, the coating would break the tips or wear them quickly if penetration were attempted. Grube only teaches that an “abrading pad” can have a hardness similar to the probe, and from that description, it would be clear that the probe will be abraded, worn or possibly broken.

Finally, Applicants respectfully submit that, since Skinner's curable coating is the cross-linked hard coating, such coating would not be used as a cleaning layer for removably receiving needles and for removing and retaining impurities, as would be understood by those skilled in the art.

Incompatible Prior Art Teachings

Finally, Applicants again submits that Grube et al and Skinner are incompatible, teach away from each other, and would not be combined.

Grube et al teaches directly opposite to the present invention and to Skinner et al. Grube requires use of an abrasive, which is consistent with having a tough outer layer that would prevent penetration by a probe. The “tough, hard and protective” layer of Skinner et al, if used to clean the tips of probes in Grube, would not involve penetration but only surface rubbing. To the extent that there is penetration of an abrasive pad in a first step required by Grube, followed by a rubbing on a separate roller in a second step, there is a teaching away from the one-step process and structure of the present invention.

Skinner is not combinable with Grube and, even if combined, does not satisfy the limitations in the claims.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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